

09/7521837

L Number	Hits	Search Text	DB	Time stamp
1	18361	(defect\$4 or abnormal\$4 or debug\$4) adj5 (analys\$4 or analyz\$4 or test\$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/08/26 16:32
3	1671	((defect\$4 or abnormal\$4 or debug\$4) adj5 (analys\$4 or analyz\$4 or test\$4)) with (program\$ or application\$)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/08/26 16:23
4	79431	operat\$4 adj state\$	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/08/26 16:25
5	3631	time-series	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/08/26 16:26
7	0	(((defect\$4 or abnormal\$4 or debug\$4) adj5 (analys\$4 or analyz\$4 or test\$4)) with (program\$ or application\$)) with (operat\$4 adj state\$)) and time-series	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/08/26 16:27
6	4	(((defect\$4 or abnormal\$4 or debug\$4) adj5 (analys\$4 or analyz\$4 or test\$4)) with (program\$ or application\$)) with (operat\$4 adj state\$)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/08/26 16:30
8	0	(((defect\$4 or abnormal\$4 or debug\$4) adj5 (analys\$4 or analyz\$4 or test\$4)) with (program\$ or application\$)) and (operat\$4 adj state\$) and time-series	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/08/26 16:30
9	57	(((defect\$4 or abnormal\$4 or debug\$4) adj5 (analys\$4 or analyz\$4 or test\$4)) with (program\$ or application\$)) with cause	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/08/26 16:32
10	3	(solution or resolv\$4 or solv\$4 or answer\$4) with (((defect\$4 or abnormal\$4 or debug\$4) adj5 (analys\$4 or analyz\$4 or test\$4)) with (program\$ or application\$)) with cause)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/08/26 16:42
11	5	(solution or resolv\$4 or solv\$4 or answer\$4) same (((defect\$4 or abnormal\$4 or debug\$4) adj5 (analys\$4 or analyz\$4 or test\$4)) with (program\$ or application\$)) with cause)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/08/26 16:43

12	25	(solution or resolv\$4 or solv\$4 or answer\$4) and (((defect\$4 or abnormal\$4 or debug\$4) adj5 (analys\$4 or analyz\$4 or test\$4)) with (program\$ or application\$)) with cause)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB USPAT	2003/08/26 16:43
13	1		USPAT	2003/08/26 16:45
14	1		USPAT	2003/08/26 16:45
15	1		USPAT	2003/08/26 16:45
16	1		USPAT	2003/08/26 16:46
17	1		USPAT	2003/08/26 16:47
18	1		USPAT	2003/08/26 16:47
19	0		USPAT	2003/08/26 16:48
20	1		USPAT	2003/08/26 16:48

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17	1		USPAT	2003/08/26 16:47
18	1		USPAT	2003/08/26 16:47
19	0		USPAT	2003/08/26 16:48
20	1		USPAT	2003/08/26 16:48

PAT-NO: JP411184071A
DOCUMENT-IDENTIFIER: JP 11184071 A
TITLE: PHOTOMASK DEFECT ANALYSIS APPARATUS AND DEFECT
ANALYSIS
PHOTOMASK METHOD AS WELL AS RECORD MEDIUM RECORDED WITH
DEFECT ANALYSIS PROGRAM

PUBN-DATE: July 9, 1999

INVENTOR-INFORMATION:

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✓✓

ASSIGNEE-INFORMATION:

NAME	COUNTRY
TOPPAN PRINTING CO LTD	N/A

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APPL-DATE: December 22, 1997

INT-CL (IPC): G03F001/08, G01N021/88, G06T007/00

ABSTRACT:

PROBLEM TO BE **SOLVED**: To provide a photomask pattern **defect analysis** apparatus and method capable of analyzing the **cause** for the occurrence of abnormality, etc., in a production process by accumulating the detailed information of defects as well as a recording medium recorded with a photomask **defect analysis program**.

SOLUTION: The image data of the defective part detected by a defect observation inspection section 1 is converted to bit map image data in an image input section 2 and thereafter, the defective part is recognized in an image processing section 3. The area, shape, size, kind, etc., of the recognized defective part are decided in a defect deciding section 4. The result of the decision is accumulated as the defect information in a defect information data base 5. The characteristics, cause for the occurrence, etc., of the detected defective part are analyzed in a data analysis section 6 in accordance with the

defect information obtd. by the defect deciding section 4 and the
defect
information accumulated in the defect information data base 5. The
result of
the analysis is outputted from a data output section 7.

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US-PAT-NO: 6567924

DOCUMENT-IDENTIFIER: US 6567924 B1

TITLE: Technique for practically measuring
cycle-by-cycle repeatable system behavior

----- KWIC -----

Brief Summary Text - BSTX (2):

In the field of computer system testing, it is generally desirable to develop tools for reliably identifying defects in computer systems pertaining to both hardware and software operation. One prior art approach involves generating pseudo-random code to run on the system being tested and comparing emulated results for this test code with results actually obtained on the computer system being tested. Where there is a discrepancy between emulated and actual results, the test program generally flags the existence of a possible defect as a consequence of the discrepancy. However, the discrepancy between the emulated and actual results and any other information collected during the first failure may be insufficient to identify the cause of the suspected defect. More information may need to be collected to narrow the search for the cause of the defect, which can be accomplished only if the test program can repeat the defective behavior. If the defective behavior cannot be repeated, it may be very difficult to determine the cause of the defect.

Detailed Description Text - DETX (12):

In the exemplary embodiment of FIG. 1, events which may be counted during a given timing window to help ensure that a repeatable counter state practically assures repeatable system behavior, and counters for preserving such measurements include: 1) the number of clock cycles recorded in counter 110, 2) the number of transactions issued on the central buses recorded in counter 111, 3) the number of data cycles issued on the central buses recorded in counter 112, 4) the number of delay cycles between winning bus arbitration and issuing

a transaction on the central buses recorded in counter 113, 5) the number of delay cycles needed to resolve coherency for transactions on the central buses recorded in counter 114, 6) the number of transactions in progress accumulated each clock cycle on the central buses recorded in counter 115, 7) the number of coherent transactions in progress accumulated each clock cycle recorded in counter 116, and 8) the number of memory page open transactions issued to memory storage recorded in counter 117. It will be appreciated that the count for the events listed above may increase by more than one count in a particular sampling operation. For example, in the case of event type 6 above, if five transactions are in progress when a sampling operation for event type 6 is conducted, the value stored in the counter for event type 6 will be incremented by five rather than by one.

US-PAT-NO: 6304982

DOCUMENT-IDENTIFIER: US 6304982 B1

TITLE: Network distributed automated testing system

----- KWIC -----

Brief Summary Text - BSTX (8):

Thus, there is a need in the art for techniques that increase testing efficiency by solving these problems. The present invention solves these problems using a server computer as a central repository for all tests and results, wherein the server computer is connected to any number of client computers that perform the tests.

Detailed Description Text - DETX (4):

The present invention improves testing efficiency by using a server computer as a central repository for all tests performed by any number of connected client computers. The server computer also acts a central repository for the results of these tests returned by the client computers. A test manager executed by the server computer analyzes the results of the tests performed by the client computers, and determines which tests have passed or failed during execution, whether the tests failed because of an application or other error, and which tests should be re-executed by the same or different client computer. In this manner, the present invention maximizes the testing efficiency of the resources used and minimizes the amount of time required of the operator to confirm failures. The operator is presented with tests grouped according to their status, i.e., tests that succeeded, tests with errors, tests that may reveal an application program defect but are difficult or impossible to reproduce, and tests that reproducibly cause an application program to fail. For the latter category, the operator has test results for each client computer, so it is immediately apparent whether a defect is universal for the application program or specific to a particular type or configuration of client computer. Further, instead of having to interpret whether individual

tests

were successful or failed, a test grouper analyzes the error messages produced by the application being tested, so that tests that reveal the same defect can be grouped together. Moreover, a test reducer is iteratively applied to selected tests to reduce the test to the smallest subset of the original test that still reveals the defect.

US-PAT-NO: 5854924

DOCUMENT-IDENTIFIER: US 5854924 A

TITLE: Static debugging tool and method

----- KWIC -----

Brief Summary Text - BSTX (4):

Executing the program in order to debug the program requires the development of test suites designed to exercise the program in order to cause the various errors to exhibit themselves so that they can be identified and corrected. Although this approach works well in many circumstances, it does have several limitations. First the development of the test suites themselves can be expensive and time consuming. It may be extremely difficult to identify and provide all of the test suites necessary to exercise all of the various possible flow paths which the program being debugged may take. Second, the quality of the debugging often relies heavily on the breadth and quality of the test suites, which at times may be lacking.

Detailed Description Text - DETX (23):

As shown in FIG. 6, initially, determination is made as to whether the current function has a call to another function in step 241. If there is a call to another function, step 243 determines if there is a call to .sret1, .sret2, .sret4, or .sret8. Generally, this step determines if there is a call to a known function for returning an aggregate. If the answer is yes, the logic proceeds to step 220 of FIG. 5. If in step 241, the current function does not call another function, or if in step 243 there is not a call to .sret1, .sret2, .sret4, or .sret8, then the logic proceeds to step 245 which determines if there is a return to %07+12 or %L7+12. Generally, this step determines if the current function returns an aggregate itself. If so, the aggregate flag for the current function is set to true in step 220 of FIG. 5 and, if not, control is passed to step 222 of FIG. 5 which sets the aggregate

US-PAT-NO: 5615332

DOCUMENT-IDENTIFIER: US 5615332 A

TITLE: Debugging aid apparatus

----- KWIC -----

Brief Summary Text - BSTX (18):

As described, in the computer with the debugging aid apparatus of the prior art, since the system call issued from the application task 6 written in a high-level language calls the supervisor 71 through the high-level language interface routine 12, the address that the first return-address fetch means 8 fetches as the system call issuing address is always the address of the high-level language interface routine 12. In other words, when a system call is issued from one of the application tasks 6, it is not possible to identify the application task 6 that issued the system call, by referencing the address that was fetched by the first return-address fetch means 8 and stored in the table 9. This causes a problem in debugging, when analyzing an error caused by the application task 6 during the execution of the OS 7 service or processing.

Detailed Description Text - DETX (15):

To solve this problem, the present invention provides a flag FLG (see FIG. 12) to indicate whether the system call has been issued through the high-level language interface routine 12. When a system call is issued, the value of the FLG is examined; if the flag is set, it is determined that the system call has been issued from the high-level language interface routine 12, and the number of system call parameters is obtained from the type of the system call function code to obtain the return address to the application task 6. Each system call type is stored with the number of system call parameters in the form as shown in FIG. 13 in the table 9. Then, the address of the stack where the return address to the high-level language interface routine 12, the system call parameters, and the return address to the application task 6 are pushed

in this order from the top, is incremented by addresses proportional to the number of parameters, and the return address to the application task 6 is fetched from the base of the stack and the fetched address is stored into the table 9. On the other hand, if the FLG is not set, the system call is issued directly from the assembly language application task; therefore, the return address to the application task stored at the address pointed to by the SP is stored into the table 9.

US-PAT-NO: 5522036

DOCUMENT-IDENTIFIER: US 5522036 A
See image for Certificate of Correction

TITLE: Method and apparatus for the automatic analysis
of
computer software

----- KWIC -----

Brief Summary Text - BSTX (9):

Another method of program debugging and analysis involves the use of a special program, known as a program debugger which monitors the execution of a software program and oversees its execution. Such debuggers typically offer enhanced flexibility and more information to the programmer than possible with the simple PRINT method, particularly with respect to a user interface presented to the programmer. Utilizing a debugger, a programmer will normally specify one or more lines of the software program as "breakpoints", or points within a software program which when encountered suspend the execution of the program so that the programmer may examine processor registers or variables. Breakpoints are not limited to specific lines of code, breakpoints may be used to interrupt execution when an expression changes value, or when a expression reaches a value. Despite apparent advantages over the PRINT method, program debugging and analysis using known tools suffer from many of the same infirmities i.e., they do not automate the understanding of cause-effect relationship between faults and failures (manifestation of fault).

Detailed Description Text - DETX (10):

The synchronization CALL() statements reference the SUM-Interface library 263. The SUM-Source code 247 is compiled by compiler/linker 260 and the resulting code is linked with SUM-Interface library 263 thereby resolving the CALL() references. The output code produced by the compiler/linker 260 operating on SUM-Source code 247 and SUM-Interface library is then executed by CPU 241. During the execution of this code, the synchronization statements

embedded into SUM-Source and now compiled/linked, are executed which, in turn invoke the execution of Analytical Engine 244. The creation of SUM-Source 247, compiling/linking it with SUM-Interface library and sending synchronization signals to the SUM-Model is not done in the embodiments utilizing the SUM-Object code or in embodiments utilizing a language interpreter 268 operating on SUM-Repository 246. In those last two embodiments the SUM-Model 243 controls the execution of the target process.

Detailed Description Text - DETX (18):

Definition F1: A Reduced Logic Condition (LC) is a process element with one control input and two control outputs. One of the two control outputs are assigned to Boolean 0 (False) and the other control output is assigned to Boolean 1 (True) which correspond to a solution to the logic condition.

Detailed Description Text - DETX (19):

Definition F1.1: The Low Potential solution of a logic condition is the "0" Boolean solution (False) to the logic condition.

Detailed Description Text - DETX (20):

Definition F1.2: The High Potential solution of a logic condition is the "1" Boolean solution (True) to the logic condition.

Detailed Description Text - DETX (22):

Definition F3: The Main Branch of a process is the path traversed through a process from an origin of the main branch (process entry or high potential solution of logic condition) to a process terminal when all of the logic conditions which comprise that path are passed through their low potential solutions.

Detailed Description Text - DETX (39):

The first step performed by SUM-builder 259 is the construction of the SUM-Frame which is representative of the target process 250. This step is not needed if the SUM-Graph is constructed directly from the target process. The target process is processed by the SUM-Builder through the "Next Lowest Potential" rule or alternatively, through the complementary "Next Highest Potential" rule. FIG. 22 is a flow chart depicting the steps

associated with the analysis of a software process by the next lowest potential rule. The analyzer proceeds by beginning its analysis at start block 2200. Successive statements of the process are parsed by block 2202 until a logic condition or process terminal is met. If a logic condition is met as determined by block 2204, the low potential solution of this logic condition is taken as dictated by block 2206. When a rewind or exit terminal is encountered as determined by block 2208 and untraversed high potential paths remain in the software process 2210, the Sum-Builder locates the logic condition that was last passed through its low potential solution and which high potential path was not yet taken, and its high potential path is then taken 2214. The analyzer then proceeds with the analysis via block 2202. These steps repeat until all of the high potential paths through the software process being examined are traversed by the analyzer.

Detailed Description Text - DETX (45):

Main branches of the graph are directed vertically down and represent tracks by which the target process 250 execution progresses, unless the track is switched as the result of the high potential solution to a logic condition encountered in the track. As shown in FIG. 5(A), every track has a unique b coordinate. Every track of the graph is parallel to one another.

Detailed Description Text - DETX (50):

All possible changes in the direction of control is reduced to one--to the right as the chart is traversed. In this manner, all high potential solutions to a logic condition are represented as a shift to the right in the graph. Only backward (up and left) jumps of unconditional control statements are possible when a software process is represented by a reduced flow chart. An exception to this general rule is an exit from a loop. Such an exit may be made forward.

Detailed Description Text - DETX (51):

Definition G2: The negative state of a logic condition is the state of a

logic condition which, when evaluated results in its 0-solution or low potential solution. With reference to FIG. 5(A), logic condition 1 is represented as L1 at k,b coordinate 2,1. Traversing the SUM-Graph shown in FIG. 5(A) through L1 with L1 in its negative state would result in relocating to k,b position 3,1 which is represented by SUM-Object set member /7 in the graph.

Detailed Description Text - DETX (52):

Definition G3: The positive state of a logic condition is the state of a logic condition which, when evaluated results in its 1-solution or high potential solution. With reference to FIG. 5(A), traversing the SUM-Graph shown in FIG. 5(A) through L1 with L1 in its positive state would result in relocating to k,b position 3,7 which is represented by SUM-Object set member E1 in the graph.

Detailed Description Text - DETX (53):

Definition G4: The binary address (BA) of an SUM-Graph element shows that elements position relative to process logic constructs and is represented by the integers 1 and 0 where the integers comprising the BA represent the solutions of the logic conditions in the t-pass up to that element with the process entry assigned the binary address of 1.

Detailed Description Text - DETX (55):

Referring once again to FIG. 5(A), the binary address of k,b position 8,1 (L3) is 100. This is constructed from the process address (binary address 1), the negative solution (0) to the logic condition L1 located at k,b position 2,1 and a negative solution to logic condition L2 located at k,b position 6,1 in the graph. As a further example the binary address of A7 (located at k,b position 7,5 in FIG. 5(A)) is 101. This is constructed from the process address (binary address 1), the negative solution (0) to the logic condition L1 located at k,b position 2,1 in the graph and the positive solution (1) to the logic condition L2 located at k,b position 6,1 in the graph.

Detailed Description Text - DETX (58):

FIG. 26 is a flow chart depicting the steps associated with the analysis of

a software process by the next lowest potential rule and the construction of the resulting SUM-Graph. The analyzer proceeds by beginning its analysis at start block 2600. The position on the graph is assigned to k,b position of 1,1 2601, and the entry binary address is assigned to 1 as indicated in block 2602. Successive statements of the process are examined by block 2603 with the SUM-Graph(k,b) position being populated with the SUM-Object set member representative of the examined statement as required by block 2604. The repository is updated in block 2605 and if the statement under examination presently is a logic condition 2606, then the low potential solution to the logic condition is taken 2609, the present k,b position is updated by k=k+1 as stated in block 2612 and the statement reexamination block 2603 is reentered.

Detailed Description Text - DETX (61):

If there were untraversed high potential paths as determined by block 2616, then the SUM-Graph position is updated to the last logic condition passed through its 0 solution (block 2617) and a new main branch of that logic condition is begun at SUM-Graph position(nextk, nextb) where nextk is assigned to k(logic condition)+1 and next b is assigned to the last used b+1. The last used b is updated and the process then continues with the examination statement 2603.

Detailed Description Text - DETX (62):

The complementary to the Next Lowest Potential method (i.e., the Next Highest Potential method) that was mentioned earlier means the following: within the Next Highest Potential method, main branches would start not from the positive solutions of logic conditions, but from the negative solutions of logic conditions, and the main branches would pass not through the negative solutions of the logic conditions, but through the positive solutions of logic conditions.

Detailed Description Text - DETX (65):

In the present preferred embodiment, the SUM-Graph is built in only two directions--down and to the right as one looks at the graph. When the

SUM-Graph so constructed is traversed, the traversal proceeds down the graph and can only be interrupted by shifting to the right as a result of a high potential solution to an encountered logic condition.

Detailed Description Text - DETX (66):

Referring once again to FIG. 5(A) the graph traversal would begin at k,b position 1,1 (process entry) and proceed through logic condition L1 (k,b position 2,1), through label /7 (k,b position 3,1), through arithmetic A1 k,b position 4,1) and so on until terminal *1 (k,b position 10,1) is reached. Such a traversal would proceed in a single direction, down the graph. If however, a high potential solution to a logic condition was passed through during traversal then a shift to the right would have taken place. For example, during the above traversal, if the logic condition L1 (k,b position 2,1) were passed through its high potential solution then a shift in flow would take place to E1 (k,b position 3,7).

Detailed Description Text - DETX (69):

Referring once again to FIG. 5(A), it becomes obvious that statement A7 (k,b position 7,5) is not accessible from statement W1 (k,b position 16,4). That is because there is no possible path from statement W1 that would proceed through statement A7. Statement A7 is however, accessible from statement X1 (k,b position 9,1). That is because statement *1 (k,b position 10,1) repositions the path taken to /1 (k,b position 5,1) which immediately precedes statement L2 (k,b position 6,1). The high potential solution of L2 leads directly to statement A7. Therefore, the analyzer which is the object of the present invention is able to determine whether statement(s) or elements of target process 250 could be influenced by the correctness of a particular statement or statements within that process. When the target process 250 is represented in SUM-Graph form as shown in FIG. 5(A) and is used subsequently for the construction of SUM-Model 243, the analyzer is capable of evaluating the possibility for a statement s1 of target process 250 to be responsible for the misbehavior of statement s2 of target process 250 by defining accessibility

between s1 and s2 necessary condition for cause-effect relationship. Alternatively, the analyzer is capable of evaluating the potential for statement s2 to be effected by the modification of statement s1.

Detailed Description Text - DETX (72):

The shift potential is the potential of a logic condition to increment the

SUM-Graph b coordinate as a result of a positive solution of the logic condition. With reference to FIG. 5(A), logic conditions L3 (k,b position

8,1), L4 (k,b position 11,2), L5 (k,b position 15,3) and L6 (k,b position 8,5)

all have a shift potential of 1 because a positive solution to any of them

results in a right shift by one of the b coordinate. Similarly, logic condition L2 (k,b position 6,1) has a shift potential of 4 and logic condition

L1 (k,b position 2,1) has a shift potential of 6.

Detailed Description Text - DETX (76):

Definition G8: The shift potential of LC is the potential of LC to increment b-coordinate as a result of a positive solution of the LC.

Detailed Description Text - DETX (113):

As an example of data dependent endless loop and with reference to FIG. 9,

if there are no elements on the pass between /1 912 and *1 930 that can redefine the values, being examined by L2 914 and L3 924, then terminal *b1 930

will produce a data dependent endless loop as soon as L2 914 and L3 924 will be

resolved by their Low Potential solutions the first time (since the state of L2

914 and L3 924 will never change during the forward execution of the target process.)

Detailed Description Text - DETX (114):

As an example of a data independent endless loop and with reference to FIG.

9, a data independent endless loop construction is presented by Main Branches

MB2, MB3, MB4. If L3 924 is ever solved positively, the process will go in the

infinite loop, no matter, what data manipulation statements are coded within

those branches.

Detailed Description Text - DETX (116):

Entry /q 922 in FIG. 9 does not correspond to any terminal and is shown only

as an example of the fact, that the position of L3 924 in the negative

subfield
of L2 914 with rewind terminal *b1 rewinding the process control
directly in
front of L2 914 is not necessarily a fault, even if L2 914 and L3 924
are not
data dependent on the path /1 to *1 930. This is, because, if L3 924
had
received control through the entry /q 922, returning the control to the
entry
/i 912 will not necessarily result in L2 914 being solved negatively
thus in
creating an endless loop. Data Independent Endless Loops are definite
faults
in the process construction.

Detailed Description Text - DETX (150):

A positive solution of a conditional control event results in a
control
shift of a process to the right as viewed within an SUM-Graph or
reduced flow
chart. A negative solution to a conditional control event results in
the
direction of a process to proceed downward as viewed within an
SUM-Graph or
reduced flow chart.

Detailed Description Text - DETX (181):

In addition, structures representing L and D elements have an
additional
attribute which represents the increment in the b coordinate when
traversed
through their positive, or high potential solution. This corresponds
to the
shift potential previously described with respect to the SUM-Graph.
For
example, element L1 (k,b position 2,1) shown in FIG. 5(A) would have a
shift
potential of 6 recorded in its shift potential attribute field.

PAT-NO: JP02001051864A
DOCUMENT-IDENTIFIER: JP 2001051864 A
TITLE: TEST CONDUCTING SYSTEM FOR DATA PROCESSOR
PUBN-DATE: February 23, 2001

INVENTOR-INFORMATION:

NAME	COUNTRY
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ABSTRACT:

PROBLEM TO BE SOLVED: To analyze the cause of an error if the execution of a test instruction sequence is stopped due to a processor logic defect or if an infinite loop is entered and no execution result is obtained.

SOLUTION: This test conducting system has a test environment setting process 101, an instruction emulator 102 which generates an expected value, a test instruction sequence execution control process 103, a result comparing result 104, and a fault factor specifying process 105, and an instruction and an object function which cause a fault are found out to investigate the fault factor if the expected value generated by the instruction simulation of the test instruction sequence becomes discrepant with the execution result of the test instruction sequence on a data testing device or, if the execution of the test instruction sequence is stopped due to the fault resulting from a processor logic defect, or if an infinite loop is entered and no execution

result is obtained, thereby evading the occurrence of a fault caused by
the
same defect factor in the subsequent execution of a test program.

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